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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,010	11/24/2003	Junnan Xi	MINB-02013/A-3057	9106

7590 01/13/2005
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1200 Seventeenth Street, N.W.
Washington, DC 20036

EXAMINER

SAN MARTIN, EDGARDO

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/719,010

Applicant(s)

XI, JUNNAN

Examiner

Edgardo San Martin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5 and 7 is/are rejected.
- 7) ☒ Claim(s) 2,4,6 and 8-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Bissell (US 6,232,752).

Bissell teaches a booster circuit (Figs.6 and 8) for a pre-drive circuit that drives a drive circuit of a brushless direct current single-phase motor characterized in that, the drive circuit includes series connectors of two main switching elements which are a pair of transistors (Fig.8, Items 42 and 47), and a motor coil interconnected between junctions of the two main switching elements of the series connectors, the booster circuit provides ON/OFF power flow control to the motor coil which is connected between a direct current power supply and a ground of the drive circuit, wherein ON/OFF control of the respective main switching elements is prescribed at any timing from any direction, and wherein the booster circuit requires a control voltage that exceeds a power supply voltage to turn ON the two main switching elements of the direct current power supply side, the two main switching elements includes a first transistor (Fig.8, Item 42) that turns ON when a first end side of the motor coil reaches a higher electric potential than another end side of the motor coil and charges a first capacitor (Fig.8, Item 45) from the direct current power supply via a first diode (Fig.8,

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Item 41), a second transistor (Fig.8, Item 47) that turns ON when the another end side of the motor coil reaches a higher electric potential than the first end side of the motor coil and mutually conducts electricity between a terminal at a connection between the first transistor and the first capacitor and the direct current power supply to increase the electric potential of a junction of the first capacitor and the first diode, and a second capacitor (Fig.8, Item 50) that receives an electric charge and is charged from the first capacitor (Fig.8, Item 45) via a second diode (Fig.8, Item 48) when the second transistor (Fig.8, Item 47) turns ON and is connected between said second diode and a switch terminal of the direct current power supply side of the second transistor, wherein boost voltage output (Fig.8, Item Vout) is obtained from the connection path of the second diode (Fig.8, Item 48) and the second capacitor (Fig.8, Item 50) (Figs.6 - 8; Col.5, Line 54 – Col.8, Line 16).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bissell (US 6,232,752).

Bissell teaches the limitations discussed in a previous rejection, but fail to disclose wherein respective voltage restricting elements are connected between

respective control terminals of the first and second transistors and a ground side switch terminal; or further characterized in that a filter circuit is inserted into the boost voltage output path from the connection path between the second diode and the second capacitor.

Nevertheless, the Examiner takes Official Notice that it is well known in the art of electric motor controlling to employ a voltage restricting element being connected between respective control terminals of a transistor and a ground side switch terminal, this element is well known in the art as a snubber. Furthermore, it is well known in the art to employ filter circuits in a control system, in order to create a "smooth" electrical signal.

It would have been obvious to a person with ordinary skill in the art at the time of the invention was made to employ a voltage restricting element (snubber) and a filter circuit in the Bissell control system because the snubber would limit the transient voltages on the circuit and the filter would "clean" the signal of any disturbances or noise that could've been created by the system; in addition, the use of a Zener diode would have been obvious because the Zener diode provide a better performance than a regular diode, the combination of all this elements would increase the efficiency and performance of the motor control system.

Allowable Subject Matter

3. Claims 2, 4, 6 and 8 – 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. The attached hereto PTO Form 892 lists prior art made of record that the Examiner considered it pertinent to applicant's disclosure.

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edgardo San Martin whose telephone number is (571) 272-2074. The examiner can normally be reached on 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'E. San Martín', written in a cursive style.

Edgardo San Martín
Patent Examiner
Art Unit 2837
Class 318
January 9, 2005